File 2 C 1 L
Feddeler C/D Site
45-08
Lake County

Weaver
Boos &
Gordon, Inc.

200 SOUTH MICHIGAN AVENUE • SUITE 900 • CHICAGO, ILLINOIS 60604 • 312/922-1030 FAX 922-0201

February 2, 1999
0072-01-14

Mr. Greg Overtoom
Solid Waste Facilities Branch
Office of Solid and Hazardous Waste Management
Indiana Department of Environmental Management
100 North Senate Avenue
P.O. Box 6015, Rm. N1154
Indianapolis, Indiana 46206-6015

Boring Logs and Monitoring Well Completion Forms (MW-12 and MW-13)
Feddeler C&D Landfill
FP# 45-08
Lake County, Indiana

Dear Mr. Overtoom:

On behalf of our client, R&M Enterprises, Inc., Weaver Boos & Gordon, Inc. (Weaver Boos) is submitting the enclosed boring logs and monitoring well completion forms for MW-12 and MW-13. These new monitoring wells were installed in October 1998 as indicated in previous correspondence between the IDEM and Weaver Boos (May 8 and May 21, 1998).

A groundwater sampling event is scheduled to take place at the facility in February 1999 which will be inclusive of the two new monitoring wells. A report will be submitted to the IDEM in accordance with the permit. Please call if you have questions or comments regarding this submittal.

Very truly yours,

Weaver Boos & Gordon, Inc.

Larry G. Emerson, P.E.
Senior Project Engineer

Tamara A. Perkins
Staff Engineer

Enclosures Boring Logs, MW-12, MW-13
Monitoring Well Completion Forms, MW-12, MW-13

cc w/ enclosures: Mr. Robert W. Feddeler, R&M Enterprises, Inc.

WEAVER BOOS & GORDON, INC.
ENVIRONMENTAL & GEOTECHNICAL CONSULTANTS

Log of Soil Boring No.: MW-12 | page 1 of 2

File No.: 0072-01-10

Client: Feddeler C&D Site / R&M Enterprises

Water Level Data	Location/Elevation	Boring Information
14.0' Ft. While Drilling (BGS)	2,200,874.14 Northing Coord.	Date Started: 10/28/98
13.3' Ft. at Completion (BGS)	2,851,279.36 Easting Coord.	Date Comp: 10/28/98
17.56' At Least 24 HRS. (BGS)	685.60 Elev. (MSL) (Ground)	Location: 10100 State Rd. 2, Lowell, Indiana

Drilling Co.: Top Flight | Driller: Jeff | Helper: Matt

WBC Rep.: T. Perkins | Drill Meth.: Hollow Stem Augers | Sampling Meth. Split Spoon

Depth (ft.)	Lithology	Lithology Field Description (USDA Textural Classification)	Munsell Description	Samp. Interval	Sample No.	Blows/6in. (n Value)	HCL Reaction	pH	Q(p) (tsf)	Moisture	% Recovery	Notes
0		SANDY LOAM: Dry loose brown sandy loam (topsoil) with organic material (grass, roots, etc.), intermittent grayish brown clay loam from 2'-4'	10YR 4/3		1	7 7 8 7 (15)	None	7.9	0	Dry	50	
			10YR 4/3		2	13 12 11 7 (23)	Light	8.4	0	Dry	96	
-5		SANDY CLAY LOAM: Olive brown sandy clay loam, very stiff with intermittent grayish brown clay loam and dry topsoil	2.5Y 4/4		3	10 10 6 5 (16)	Light	8.2	3.5	Dry	96	
		CLAY LOAM: Brown clay loam with trace medium sand, very stiff	10YR 4/3		4	10 10 9 8 (19)	None	8.0	2.25	Moist	92	
		LOAMY SAND: Dark yellowish brown loamy sand, medium stiff poorly sorted fine sand with trace medium sand	10YR 4/6		5	4 4 4 6 (8)	None	7.8	0.5	Moist	83	
-10		SANDY CLAY LOAM: Grayish brown sandy clay loam with trace medium and fine sand, mottled with many red iron deposits, intermittent layers of loamy sand, soft to very stiff	2.5Y 5/4		6	6 2 3 8 (5)	V. Light	7.7	0.5	Moist	100	
			2.5Y 4/2		7	4 8 4 13 (12)	Moderate	8.0	3.0	Moist	92	
		SILTY CLAY LOAM: Yellowish brown silty clay loam with some mottling of orange, oxidized deposits	10YR 5/4						0.25			
-15		SANDY CLAY: Dark gray sandy clay, very stiff	2.5Y 4/1		8	6 8 11 11 (19)	Vigorous	8.1	2.5	Moist	75	
		CLAY: Dark grayish brown clay intermixed with clay loam and trace very fine sand, very stiff to hard	2.5Y 4/2		9	9 8 9 7 (17)	Moderate	8.2	3.5	Moist	75	
			2.5Y 4/2		10	5 6 9 11 (15)	Vigorous	8.5	4.0	Moist	67	
-20												

WEAVER BOOS & GORDON, INC.
ENVIRONMENTAL & GEOTECHNICAL CONSULTANTS

Log of Soil Boring No.: MW-12 | page 2 of 2

File No.: 0072-01-10

Client: Feddeler C&D Site
R&M Enterprises

Water Level Data	Location/Elevation	Boring Information		
14.0' Ft. While Drilling (BGS)	2,200,874.14 Northing Coord.	Date Started: 10/28/98	Drilling Co.: Top Flight	WBC Rep.: T. Perkins
13.3' Ft. at Completion (BGS)	2,851,279.36 Easting Coord.	Date Comp: 10/28/98	Driller: Jeff	Drill Meth.: Hollow Stem Augers
17.56' At Least 24 HRS. (BGS)	685.60 Elev. (MSL) (Ground)	Location: 10100 State Rd. 2 Lowell, Indiana	Helper: Matt	Sampling Meth. Split Spoon

Depth (ft.)	Lithology	Lithology Field Description (USDA Textural Classification)	Munsell Description	Samp. Interval	Sample No.	Blows/6in. (n Value)	HCL Reaction	pH	Q(p) (tsf)	Moisture	% Recovery	Notes
-20			2.5Y 4/2		11	9 6 12 9 (18)	Vigorous	8.3	3.0	Moist	100	
			2.5Y 3/2		12	11 15 20 24 (35)	Light	8.4	4.0	Moist	83	
-25			2.5Y 3/2		13	11 12 11 16 (23)	Moderate	7.8	4.5+	Moist	83	
			2.5Y 3/2		14	6 10 13 15 (23)	Light	8.0	4.5+	Moist	100	
			2.5Y 3/2		15	10 12 17 26 (29)	Light	8.2	4.5+		100	
-30		SAND: Light olive brown fine sand with some black maffic, trace very fine and medium sand, trace feldspar	2.5Y 5/3						0	Wet		
			2.5Y 4/3		16	5 6 12 27 (18)	Light	7.8	0	Wet	100	
			2.5Y 4/3		17	12 16 28 32 (44)	Light	8.0	0	Wet	50	
-35		CLAY LOAM: Gray clay loam with sand seams	2.5Y 4/3		18	17 26 32 38 (58)	Light	8.1	0 3.5	Moist	100	

Note:
Boring terminated at 36' BGS.
Groundwater elevation while drilling
Groundwater elevation at completion of boring
Groundwater elevation at least 24 hours after completion

MONITORING WELL COMPLETION REPORT

Site Name	Feddeler C&D Site	County	Lake	Well Number	MW-12
Site Location	Lowell, Indiana	Northing	2,200,874.14	Easting	2,851,279.36
Drilling Contractor	Top Flight			Date Drilling Started	10/28/98
Head Driller	Jeff	Helper	Matt	Date Completed	10/28/98
Drilling Method	Hollow Stem Auger			Drilling Fluids 'Type'	
Water Level at Completion	13.3' BGS			Date & Time	10/28/98 10:45 AM
Water Level after 24 hours	17.56' BGS			Date & Time	10/28/98 2:30 AM

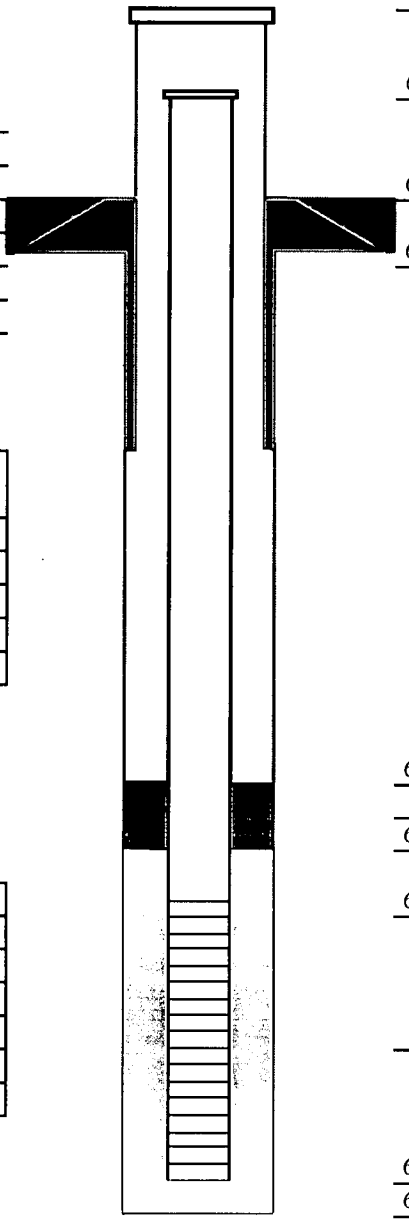
Annular Space Details

Type of Surface Seal		Concrete		
Type of Annular Sealant		Bentonite Grout		
Amount of Cement:	# of bags	1/8	lbs. per bag	94
Amount of Volclay:	# of bags	1	lbs. per bag	50
Type of Bentonite Seal (Granular, Pellet):		Pellet (Pure Gold)		
Amount of Bentonite:	# of bkts	1.5	lbs. per bkt	50
Type of Sand Pack		#5 Quartz Sand		
Source of Sand		Global Drilling Supplies		
Amount of Sand:	# of bags	4	lbs. per bag	50

Piezometer Construction Materials

	PVC	Stainless Steel	Teflon	Other (specify)
Riser Coupling Joint	x			
Riser Pipe Above W.T.	x			
Riser Pipe Below W.T.	x			
Screen	x			
Protective Casing				Flush Cover

Riser Pipe Length - feet	29.96
Protective Casing Length - feet	NA
Screen Length - feet	5.0
Total Length of Casing - feet	34.96
Screen Slot Size	#10
Diameter of borehole - inches	4.0
ID of Riser Pipe - inches	2.0



MSL	Ft.	
685.48	-0.18	Top of Procover
685.45	-0.15	Top of Riser
685.60	0.00	Ground Surface
684.60	-1.00	Top of Annular Sealant
659.79	-25.81	Top of Seal
NA	2.0	Seal Interval
657.79	-27.81	Top of Sand
655.79	-29.81	Top of Screen
NA	5.0	Screen Interval
650.79	-34.81	Bottom of Screen
649.60	-36.00	Bottom of Borehole

Notes:

Completed by: Tammy Perkins
Surveyed by: Weaver Boos & Gordon, Inc
File Number: 0072-01-10

Weaver Boos & Gordon Inc.
200 S Michigan Ave.
Chicago, IL 60604
(312) 922-1030

WEAVER BOOS & GORDON, INC.
ENVIRONMENTAL & GEOTECHNICAL CONSULTANTS

Log of Soil Boring No.: MW-13 | page 1 of 2

File No.: 0072-01-10

Client: Feddeler C&D Site / R&M Enterprises

Water Level Data	Location/Elevation	Boring Information		
15.0' Ft. While Drilling (BGS)	2,200,884.68 Northing Coord.	Date Started: 10/29/98	Drilling Co.: Top Flight	WBC Rep.: T. Perkins
14.3' Ft. at Completion (BGS)	2,851,073.44 Easting Coord.	Date Comp: 10/29/98	Driller: Jeff	Drill Meth.: Hollow Stem Augers
16.1' At Least 24 HRS. (BGS)	681.70 Elev. (MSL) (Ground)	Location: 10100 State Rd. 2, Lowell, Indiana	Helper: Matt	Sampling Meth. Split Spoon

Depth (ft.)	Lithology	Lithology Field Description (USDA Textural Classification)	Munsell Description	Samp. Interval	Sample No.	Blows/6in. (n Value)	HCL Reaction	pH	Q(p) (tsf)	Moisture	% Recovery	Notes
0		SANDY LOAM: Very dark grayish brown sandy loam (topsoil) with some very coarse angular gravel, stiff	10YR 3/2		1	3 4 4 6 (8)	Moderate	7.8	1.5	Dry	75	
		SANDY LOAM: Dark yellowish brown sandy loam intermixed with olive gray clay	10YR 4/4		2	15 16 9 6 (25)	Moderate	7.9	1.5	Damp	75	
-5		SILTY CLAY: Olive brown silty clay with little fine sand and trace medium sand, hard	2.5Y 4/3		3	17 6 12 13 (18)	Light	8.1	4.5+	Damp	96	
		SANDY CLAY LOAM: Dark grayish brown sandy clay loam with some intermixed coarse sand, yellow/orange sand seams, stiff	2.5Y 4/2		4	10 12 9 12 (21)	Light	8.2	1.5	Moist	100	
		SANDY CLAY LOAM: Yellowish brown sandy clay loam with trace medium and coarse sand	10YR 5/4		5	13 14 14 16 (28)	Moderate	8.1	1.0	Moist	21	
-10		SANDY CLAY LOAM: Dark gray sandy clay loam with sand seams	2.5Y 4/1		6	15 8 6 12 (14)	Light	8.2	1.5	Wet	50	
		SAND: Dark gray fine sand with trace medium and coarse sand					Light		0	Wet		
		SANDY CLAY LOAM: Dark gray sandy clay loam, very stiff	2.5Y 4/1		7	6 8 6 7 (14)	Moderate	8.1	2.5	Moist	92	
-15		SILTY SAND: Dark gray silty sand with some maffic material and trace feldspar	2.5Y 4/1		8	6 6 12 9 (18)	Light	7.9	0	Wet	58	
		SILTY SAND: Olive brown silty sand with some medium and coarse sand, some very coarse gravel, intermittent seams of silty clay loam	2.5Y 4/3		9	10 12 6 11 (18)	V. Light	7.8	0	Wet	88	
		SAND: Dark grayish brown sand with some medium and trace coarse sand, trace maffic and feldspar, silty clay loam seams	2.5Y 4/2		10	7 9 13 12 (22)	Moderate	7.7	0	Wet	100	
-20												

WEAVER BOOS & GORDON, INC.
ENVIRONMENTAL & GEOTECHNICAL CONSULTANTS

Log of Soil Boring No.: MW-13 | page 2 of 2

File No.: 0072-01-10

Client: Feddeler C&D Site / R&M Enterprises

Water Level Data	Location/Elevation	Boring Information		
15.0' Ft. While Drilling (BGS)	2,200,884.68 Northing Coord.	Date Started: 10/29/98	Drilling Co.: Top Flight	WBC Rep.: T. Perkins
14.3' Ft. at Completion (BGS)	2,851,073.44 Easting Coord.	Date Comp: 10/29/98	Driller: Jeff	Drill Meth.: Hollow Stem Augers
16.1' At Least 24 HRS. (BGS)	681.70 Elev. (MSL) (Ground)	Location: 10100 State Rd. 2, Lowell, Indiana	Helper: Matt	Sampling Meth. Split Spoon

Depth (ft.)	Lithology	Lithology Field Description (USDA Textural Classification)	Munsell Description	Samp. Interval	Sample No.	Blows/6in. (n Value)	HCL Reaction	pH	Q(p) (tsf)	Moisture	% Recovery	Notes
20		SANDY CLAY LOAM: Sandy clay loam with seams of stiff clay, very stiff	2.5Y 4.2		11	8 7 7 13 (14)	Light	7.7	2.0	Wet	100	

Note:
Boring terminated at 22' BGS.
Groundwater elevation while drilling
Groundwater elevation at completion of boring
Groundwater elevation at least 24 hours after completion

MONITORING WELL COMPLETION REPORT

Site Name	Feddeler C&D Site	County	Lake	Well Number	MW-13
Site Location	Lowell, Indiana	Northing	2,200,884.68	Easting	2,851,073.44
Drilling Contractor	Top Flight			Date Drilling Started	10/29/98
Head Driller	Jeff	Helper	Matt	Date Completed	10/29/98
Drilling Method	Hollow Stem Auger			Drilling Fluids 'Type'	
Water Level at Completion	14.3' BGS			Date & Time	10/29/98 8:00 AM
Water Level after 24 hours	16.1' BGS			Date & Time	10/29/98 11:30 AM

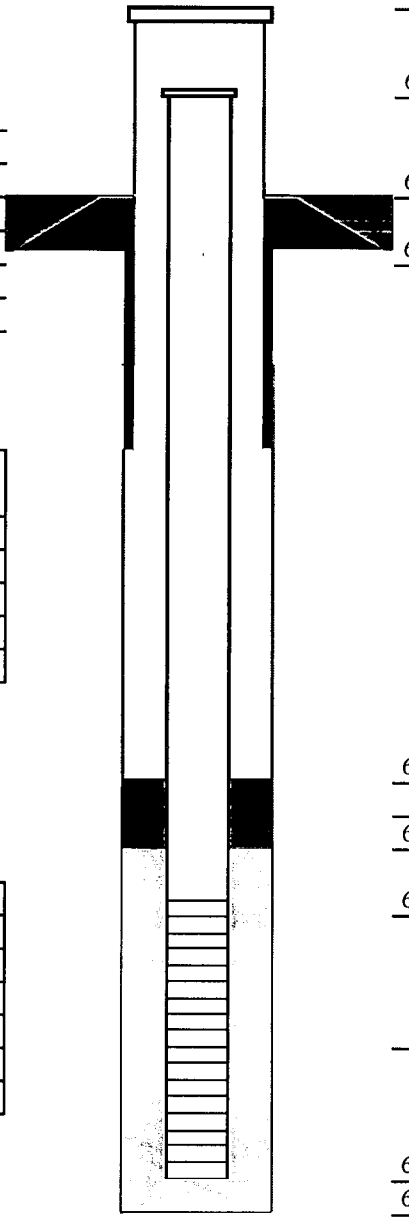
Annular Space Details

Type of Surface Seal		Concrete		
Type of Annular Sealant		Bentonite Grout		
Amount of Cement:	# of bags	1/8	lbs. per bag	94
Amount of Volclay:	# of bags	1	lbs. per bag	50
Type of Bentonite Seal (Granular, Pellet):		Pellet (Pure Gold)		
Amount of Bentonite:	# of bkts	1.5	lbs. per bkt	50
Type of Sand Pack		#5 Quartz Sand		
Source of Sand		Global Drilling Supplies		
Amount of Sand:	# of bags	4	lbs. per bag	50

Piezometer Construction Materials

	PVC	Stainless Steel	Teflon	Other (specify)
Riser Coupling Joint	x			
Riser Pipe Above W.T.	x			
Riser Pipe Below W.T.	x			
Screen	x			
Protective Casing				Flush Cover

Riser Pipe Length - feet	15.62
Protective Casing Length - feet	NA
Screen Length - feet	5.0
Total Length of Casing - feet	20.62
Screen Slot Size	#10
Diameter of borehole - inches	4.0
ID of Riser Pipe - inches	2.0



MSL	Ft.	
681.70	0.00	Top of Procover
681.38	-0.32	Top of Riser
681.70	0.00	Ground Surface
681.20	-0.50	Top of Annular Sealant
670.40	-11.30	Top of Seal
NA	2.0	Seal Interval
668.40	-13.30	Top of Sand
666.40	-15.30	Top of Screen
NA	5.0	Screen Interval
661.40	-20.30	Bottom of Screen
659.70	-22.00	Bottom of Borehole

Notes:

Completed by: Tammy Perkins
Surveyed by: Weaver Boos & Gordon, Inc
File Number: 0072-01-10

Weaver Boos & Gordon Inc.
200 S Michigan Ave.
Chicago, IL 60604
(312) 922-1030

File 2C1D, Feddeler C/D Site

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live

Frank O'Bannon
Governor

John M. Hamilton
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.ai.org/idem

Via Certified Mail P 126 018 290

May 21,1998

Ms. Julie Feddeler
21827 Austin
Lowell IN 46356

Dear Ms. Feddeler,

Re: Proposal for Well Installation
Feddeler C/D Site, #45-08
Lake County

IDEM staff has reviewed the ground water monitoring well installation proposal outlined in the letter titled *Proposed Modified Monitoring Well Locations and Schedule* submitted to IDEM on May 8, 1998 by Weaver Boos Consultants, Inc. In the above referenced letter, it is proposed that the final two (2) ground water monitoring wells at the Feddeler C/D Site be installed in the Right of Way along the northern side of State Route 2. IDEM Solid Waste Geology staff agrees with the proposed monitoring well installations provided that the following requirements are met.

1) Earthen materials encountered in the borings must be sampled per the requirements in 329 IAC 10-21-4.
2) The wells are spaced no farther apart than five hundred (500) feet.
3) Authorization to install in the Right of Way is granted by the Indiana Department of Transportation (DOT).
4) Any agreement made with the Indiana Department of Transportation (DOT) must account for the duration of active and post-closure sampling activity at the facility.
5) The new wells will not be sampled for analytical parameters until at least thirty (30) days after development of the wells to allow the wells to equilibrate with the aquifer.

If you have any questions regarding this matter please contact Mr. Greg Overtoom by e-mail at govertoo@dem.state.in.us or by phone at (317) 233-0579.

Sincerely,

David Becka, C.P.G., Chief
Solid Waste Geology Section
Solid and Hazardous Waste Management

GJO:gjo
cc: Mr. Mike Maxwell, Weaver Boos Consultants, Inc.
Lake County Health Department
Lake County Solid Waste Management District

Fil 2 Cld
Feddeler C/D site
45-03
Lake County

Weaver Boos Consultants, Inc.

200 SOUTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60604 • 312/922-1030 FAX 922-0201

May 8, 1998
Project #97094.00

Mr. Greg Overtoom
Indiana Department of Environmental Management
Solid Waste Geology Section
100 North Senate Ave.
P.O. Box 6015
Indianapolis, IN 46206-6015

Re: Proposed Modified Monitoring
Well Locations and Schedule
Feddeler C/D Landfill, #45-08
Lake County

Dear Mr. Overtoom:

Pursuant to our discussions during the meeting held at IDEM Offices on April 22, 1998, on behalf of our client, R&M Enterprises, Weaver Boos Consultants, Inc. is herein providing proposed revised locations for the installation of two monitoring wells downgradient of the above referenced facility. In addition, a schedule is proposed for monitoring well installation, and completion of the first groundwater sampling event at facility.

The proposed approximate locations of these monitoring wells are shown on the attached Figure. The monitoring wells will be placed approximately 100 feet apart, in an east-west direction, in the northern of the Right of Way of State Route 2, just off the shoulder of the highway. The monitoring wells will be installed in general accordance with 329 IAC 10-21-4. However, the wells will be flush mounted, and will contain sealable manhole covers for security, rather than an above ground, traditional steel protective casing. The exact

horizontal locations of the monitoring wells will be determined in the field, and will depend upon the location of underground utilities near the highway.

We understand that authorization from the Indiana Department of Transportation (DOT) is needed in order to begin the field work. We have already contacted representatives of the DOT, and expect to obtain written authorization from them before proceeding with the monitoring well installation.

The monitoring wells will be screened through the uppermost aquifer, which, based upon existing information, we anticipate to encounter at approximately 30 to 40 feet below ground surface.

Monitoring well installation field work will commence within 30 days of IDEM and DOT approval of this proposal. After monitoring well installation and development is complete, the monitoring wells will be sampled. We propose to conduct the groundwater sampling event within 60 days after the completion of the monitoring well installation field work.

We trust that this proposal meets your approval. If you have additional questions, please contact us at your convenience.

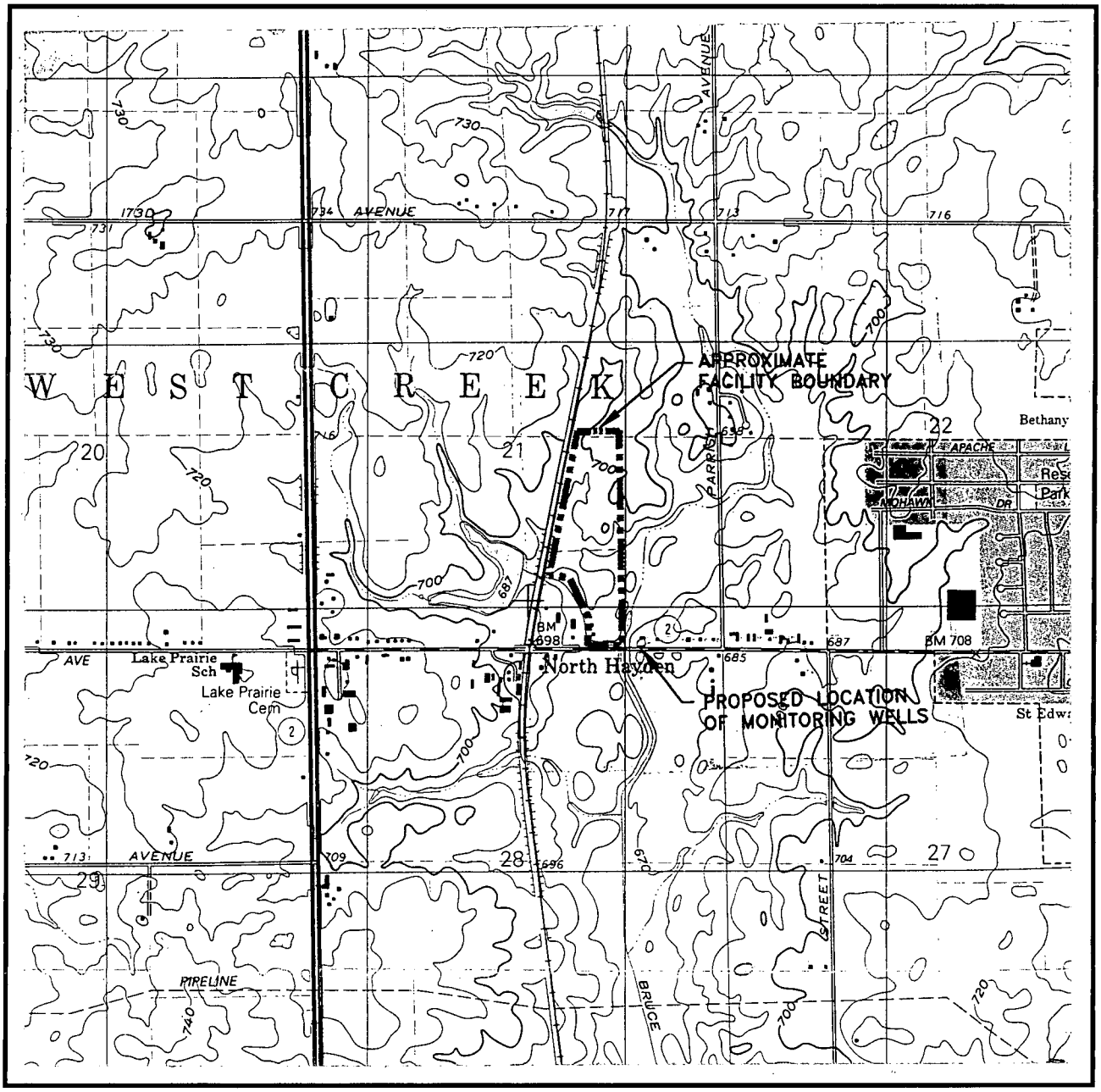
Sincerely,

Weaver Boos Consultants, Inc.

Michael B. Maxwell

Michael B. Maxwell
Staff Geologist

cc: Ms. Julie Feddeler - R&M Enterprises



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ADAPTED FROM THE LOWELL, INDIANA, USGS 7.5 MINUTE SERIES QUADRANGLE, DATED 1992

COUNTOUR INTERVAL - 10 ft
SCALE - 1:24,000

PROPOSED MONITORING WELL LOCATIONS

Feddeler Construction/Demolition Site
Lowell, Indiana

WEAVER BOOS CONSULTANTS, INC.
CHICAGO, IL (312) 922-1030
GRIFFITH, IN (219) 923-9609
ALBUQUERQUE, MN (505) 867-6990

PREPARED BY: MBM	DATE: 05/07/98	FILE: 97_94.00
REVIEWED BY: DW	WELLLOC.doc	FIGURE 1

File 2C1d
Feddeler C/D Site
#45-08
Lake County

Weaver Boos Consultants, Inc.

200 SOUTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60604 • 312/922-1030 FAX 922-0201

April 16, 1998
Project #97094.00

Mr. Greg Overtoom
Indiana Department of Environmental Management
Solid Waste Geology Section
100 North Senate Ave.
P.O. Box 6015
Indianapolis, IN 46206-6015

Re: Groundwater Monitoring
Feddeler C/D Landfill, #45-08
Lake County

Dear Mr. Overtoom:

Pursuant to IDEM's correspondence addressed to Mr. Robert Feddeler dated August 20, 1997, on behalf of our client, R&M Enterprises, Weaver Boos Consultants, Inc. is herein submitting the analytical results from the sampling of upgradient groundwater monitoring wells that took place on February 2, 1998 at the above referenced facility.

Field procedures were implemented in accordance with the site-specific Sampling and Analysis Plan, dated November 3, 1997, Revised March 17, 1998. The laboratory analytical report is attached, along with an analytical results summary table.

Monitoring wells MW-1, MW-5, MW-6, and MW-8 were sampled for the Phase I parameters listed in Permit Condition D10. Inorganic constituents were detected at each of the above wells. In addition, the volatile organic constituent, methylene chloride was detected at each of the above monitoring wells, at concentrations ranging from 52 to 63 ug/L. However, methylene chloride is a known laboratory contaminant, and is likely a

laboratory artifact. We believe it is unlikely that methylene chloride is present in the groundwater at the Feddeler site.

We trust that the enclosed is sufficient for your current needs. If you have additional questions concerning the enclosed data, please contact us at your convenience.

Sincerely,

Weaver Boos Consultants, Inc.

Michael B. Maxwell

Michael B. Maxwell
Staff Geologist

cc: Ms. Julie Feddeler - R&M Enterprises
Mr. Joe Scodro - Bigham, Summer Welsh & Spillman

Summary of Analytical Results
February 1998 Background Sampling Event
Feddeler C/D Facility - Lowell, IN

Constituent	Units	MW-1	MW-5	MW-6	MW-8	MCL/SMCL
Field pH	SU	6.84	7.5	6.94	7.08	--
Specific Cond	umhos/cm	619	591	712	712	--
Chloride	mg/L	4.5	7.25	4.5	2.5	250
Barium	mg/L	0.085	0.12	0.13	0.17	2
Arsenic	mg/L	0.015	0.025	0.016	0.038	0.05
Sodium	mg/L	11	18	11	17	--
Sulfate	mg/L	86.6	128	71.8	13.8	250
Ammonia	mg/L	<0.1	0.108	0.179	0.459	--
Total phenolics	mg/L	0.0114	0.0102	<0.01	0.0166	--
Methylene chloride	ug/l	55	63	54	52	--

Note:
Sampling performed on February 2, 1998

SIMA·LABS
INTERNATIONAL

February 16, 1998

Mike Maxwell
Weaver Boos Consultants
200 South Michigan, Suite 900

Chicago, IL 60604

RE: 97094.00 / Feddeler - Lowell, IN **Work Order : 9802009**

Dear Mike Maxwell,

Enclosed are the results for the 6 samples we received on February 02, 1998 for the analyses presented in the following report.

All Quality Control associated with these samples will be kept on file for your convenience for five years. After such time it will be disposed if we are not otherwise notified.

It has been a pleasure serving you; and, if you have any questions concerning these results, please do not hesitate to contact us.

Respectfully submitted,
SIMALABS International

Carla E. Svetich
Project Manager

Enclosures

SIMALABS International

Date: *Monday, February 16, 1998*

Client: Weaver Boos Consultants
Project: 97094.00 / Feddeler - Lowell, IN
Work Order: 9802009
Date Received: 02/02/98

Work Order/Sample Delivery Group Summary

Lab Sample ID	Client Sample ID	Client Description	Collection Date
9802009-01A	MW-1	Water Sample	02/02/98
9802009-01B	MW-1	Water Sample	02/02/98
9802009-01C	MW-1	Water Sample	02/02/98
9802009-01D	MW-1	Water Sample	02/02/98
9802009-01E	MW-1	Water Sample	02/02/98
9802009-02A	MW-5	Water Sample	02/02/98
9802009-02B	MW-5	Water Sample	02/02/98
9802009-02C	MW-5	Water Sample	02/02/98
9802009-02D	MW-5	Water Sample	02/02/98
9802009-02E	MW-5	Water Sample	02/02/98
9802009-03A	MW-6	Water Sample	02/02/98
9802009-03B	MW-6	Water Sample	02/02/98
9802009-03C	MW-6	Water Sample	02/02/98
9802009-03D	MW-6	Water Sample	02/02/98
9802009-03E	MW-6	Water Sample	02/02/98
9802009-04A	MW-8	Water Sample	02/02/98
9802009-04B	MW-8	Water Sample	02/02/98
9802009-04C	MW-8	Water Sample	02/02/98
9802009-04D	MW-8	Water Sample	02/02/98
9802009-04E	MW-8	Water Sample	02/02/98

SIMA·LABS
INTERNATIONAL

ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-1	*SIMALABS ID:*	9802009-01A
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE		Method: **E325.3**		Prep Date:			Analyst: **JLB**
Chloride	A	4.5	1		mg/L	1	02/03/98
SPECIFIC CONDUCTANCE		Method: **E120.1**		Prep Date: **2/13/98**			Analyst: **JEK**
Specific Conductance	A	658	10		umhos/cm	1	02/13/98
SULFATE		Method: **E375.4**		Prep Date: **2/4/98**			Analyst: **JEK**
Sulfate	A	86.6	10		mg/L	1	02/04/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
E - Value above quantitation range
S - Spike Recovery outside accepted recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits

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SIMA·LABS
INTERNATIONAL

ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-1	*SIMALABS ID:*	9802009-01B
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
ARSENIC, TOTAL		Method: **SW7060A**		Prep Date: **2/4/98**			Analyst: **LSL**
Arsenic	A	0.015	0.01		mg/L	1	02/06/98
ICP METALS, TOTAL		Method: **SW6010A**		Prep Date: **2/4/98**			Analyst: **LSL**
Barium	A	0.085	0.01		mg/L	1	02/05/98
Sodium	A	11	2		mg/L	1	02/05/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
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INTERNATIONAL

ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-1	*SIMALABS ID:*	9802009-01C
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
AMMONIA AS N		Method: **E350.1**		Prep Date: **2/9/98**			Analyst: **JEK**
Nitrogen, Ammonia (As N)	A	ND	0.1		mg/L	1	02/09/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual:
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* - Value exceeds Maximum Contaminant Level
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INTERNATIONAL

ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-1	*SIMALABS ID:*	9802009-01D
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS		Method: **SW8260A**		Prep Date:		Analyst: **NT**	
Benzene	A	ND	5		µg/L	1	02/09/98
2-Butanone	A	ND	10		µg/L	1	02/09/98
1,1-Dichloroethane	A	ND	5		µg/L	1	02/09/98
cis-1,2-Dichloroethene	A	ND	5		µg/L	1	02/09/98
trans-1,2-Dichloroethene	A	ND	5		µg/L	1	02/09/98
Ethylbenzene	A	ND	5		µg/L	1	02/09/98
Methylene chloride	A	55	5		µg/L	1	02/09/98
Toluene	A	ND	5		µg/L	1	02/09/98
4-Bromofluorobenzene	S	86.2	86-115		%REC	1	02/09/98
Dibromofluoromethane	S	116.3	86-118		%REC	1	02/09/98
1,2-Dichloroethane-d4	S	99.7	80-120		%REC	1	02/09/98
Toluene-d8	S	97.7	88-110		%REC	1	02/09/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual:
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B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
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S - Spike Recovery outside accepted recovery limits
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INTERNATIONAL

ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-1	*SIMALABS ID:*	9802009-01E
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
PHENOLICS, TOTAL		Method: **E420.2**		Prep Date: **2/11/98**			Analyst: **JEK**
Phenolics, Total Recoverable	A	0.0114	0.01		mg/L	1	02/11/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual:
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* - Value exceeds Maximum Contaminant Level
E - Value above quantitation range
S - Spike Recovery outside accepted recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits

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ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-5	*SIMALABS ID:*	9802009-02A
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE		Method: **E325.3**		Prep Date:			Analyst: **JLB**
Chloride	A	7.25	1		mg/L	1	02/03/98
SPECIFIC CONDUCTANCE		Method: **E120.1**		Prep Date: **2/13/98**			Analyst: **JEK**
Specific Conductance	A	735	10		umhos/cm	1	02/13/98
SULFATE		Method: **E375.4**		Prep Date: **2/4/98**			Analyst: **JEK**
Sulfate	A	128	10		mg/L	1	02/04/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
E - Value above quantitation range
S - Spike Recovery outside accepted recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits

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ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-5	*SIMALABS ID:*	9802009-02B
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
ARSENIC, TOTAL		Method: **SW7060A**		Prep Date: **2/4/98**			Analyst: **LSL**
Arsenic	A	0.025	0.01		mg/L	1	02/06/98
ICP METALS, TOTAL		Method: **SW6010A**		Prep Date: **2/4/98**			Analyst: **LSL**
Barium	A	0.12	0.01		mg/L	1	02/05/98
Sodium	A	18	2		mg/L	1	02/05/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual:
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B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
E - Value above quantitation range
S - Spike Recovery outside accepted recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits

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ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-5	*SIMALABS ID:*	9802009-02C
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
AMMONIA AS N		Method: **E350.1**		Prep Date: **2/9/98**		Analyst: **JEK**	
Nitrogen, Ammonia (As N)	A	0.108	0.1		mg/L	1	02/09/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

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* - Value exceeds Maximum Contaminant Level
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S - Spike Recovery outside accepted recovery limits
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R - RPD outside accepted recovery limits

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ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-5	*SIMALABS ID:*	9802009-02D
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS		Method: **SW8260A**		Prep Date:		Analyst: **NT**	
Benzene	A	ND	5		µg/L	1	02/09/98
2-Butanone	A	ND	10		µg/L	1	02/09/98
1,1-Dichloroethane	A	ND	5		µg/L	1	02/09/98
cis-1,2-Dichloroethene	A	ND	5		µg/L	1	02/09/98
trans-1,2-Dichloroethene	A	ND	5		µg/L	1	02/09/98
Ethylbenzene	A	ND	5		µg/L	1	02/09/98
Methylene chloride	A	63	5		µg/L	1	02/09/98
Toluene	A	ND	5		µg/L	1	02/09/98
4-Bromofluorobenzene	S	86.5	86-115		%REC	1	02/09/98
Dibromofluoromethane	S	107.6	86-118		%REC	1	02/09/98
1,2-Dichloroethane-d4	S	100.7	80-120		%REC	1	02/09/98
Toluene-d8	S	98.8	88-110		%REC	1	02/09/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual:
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* - Value exceeds Maximum Contaminant Level
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S - Spike Recovery outside accepted recovery limits
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INTERNATIONAL

ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-5	*SIMALABS ID:*	9802009-02E
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
PHENOLICS, TOTAL		Method: **E420.2**		Prep Date: **2/11/98**			Analyst: **JEK**
Phenolics, Total Recoverable	A	0.0102	0.01		mg/L	1	02/11/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

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Qual:
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* - Value exceeds Maximum Contaminant Level
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SD - Value diluted out
R - RPD outside accepted recovery limits

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ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-6	*SIMALABS ID:*	9802009-03A
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE		Method: **E325.3**		Prep Date:			Analyst: **JLB**
Chloride	A	4.5	1		mg/L	1	02/03/98
SPECIFIC CONDUCTANCE		Method: **E120.1**		Prep Date: **2/13/98**			Analyst: **JEK**
Specific Conductance	A	712	10		umhos/cm	1	02/13/98
SULFATE		Method: **E375.4**		Prep Date: **2/4/98**			Analyst: **JEK**
Sulfate	A	71.8	10		mg/L	1	02/04/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
E - Value above quantitation range
S - Spike Recovery outside accepted recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits

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SIMA-LABS
INTERNATIONAL

ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-6	*SIMALABS ID:*	9802009-03B
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
ARSENIC, TOTAL		Method: **SW7060A**		Prep Date: **2/4/98**			Analyst: **LSL**
Arsenic	A	0.016	0.01		mg/L	1	02/06/98
ICP METALS, TOTAL		Method: **SW6010A**		Prep Date: **2/4/98**			Analyst: **LSL**
Barium	A	0.13	0.01		mg/L	1	02/05/98
Sodium	A	11	2		mg/L	1	02/05/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
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* - Value exceeds Maximum Contaminant Level
E - Value above quantitation range
S - Spike Recovery outside accepted recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits

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INTERNATIONAL

ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-6	*SIMALABS ID:*	9802009-03C
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
AMMONIA AS N		Method: **E350.1**		Prep Date: **2/9/98**			Analyst: **JEK**
Nitrogen, Ammonia (As N)	A	0.179	0.1		mg/L	1	02/09/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
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* - Value exceeds Maximum Contaminant Level
E - Value above quantitation range
S - Spike Recovery outside accepted recovery limits
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INTERNATIONAL

ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-6	*SIMALABS ID:*	9802009-03D
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS		Method: **SW8260A**		Prep Date:		Analyst: **NT**	
Benzene	A	ND	5		µg/L	1	02/09/98
2-Butanone	A	ND	10		µg/L	1	02/09/98
1,1-Dichloroethane	A	ND	5		µg/L	1	02/09/98
cis-1,2-Dichloroethene	A	ND	5		µg/L	1	02/09/98
trans-1,2-Dichloroethene	A	ND	5		µg/L	1	02/09/98
Ethylbenzene	A	ND	5		µg/L	1	02/09/98
Methylene chloride	A	54	5		µg/L	1	02/09/98
Toluene	A	ND	5		µg/L	1	02/09/98
4-Bromofluorobenzene	S	90.0	86-115		%REC	1	02/09/98
Dibromofluoromethane	S	105.5	86-118		%REC	1	02/09/98
1,2-Dichloroethane-d4	S	103.1	80-120		%REC	1	02/09/98
Toluene-d8	S	115.6	88-110	S	%REC	1	02/09/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
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* - Value exceeds Maximum Contaminant Level
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SIMA·LABS
INTERNATIONAL

ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-6	*SIMALABS ID:*	9802009-03E
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
PHENOLICS, TOTAL		Method: **E420.2**		Prep Date: **2/11/98**		Analyst: **JEK**	
Phenolics, Total Recoverable	A	ND	0.01		mg/L	1	02/11/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual:
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INTERNATIONAL

ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-8	*SIMALABS ID:*	9802009-04A
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE		Method: **E325.3**		Prep Date:			Analyst: **JLB**
Chloride	A	2.5	1		mg/L	1	02/03/98
SPECIFIC CONDUCTANCE		Method: **E120.1**		Prep Date: **2/13/98**			Analyst: **JEK**
Specific Conductance	A	698	10		umhos/cm	1	02/13/98
SULFATE		Method: **E375.4**		Prep Date: **2/4/98**			Analyst: **JEK**
Sulfate	A	13.8	10		mg/L	1	02/04/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual:
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B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
E - Value above quantitation range
S - Spike Recovery outside accepted recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits

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ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-8	*SIMALABS ID:*	9802009-04B
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
ARSENIC, TOTAL		Method: **SW7060A**		Prep Date: **2/4/98**		Analyst: **LSL**	
Arsenic	A	0.038	0.01		mg/L	1	02/06/98
ICP METALS, TOTAL		Method: **SW6010A**		Prep Date: **2/4/98**		Analyst: **LSL**	
Barium	A	0.17	0.01		mg/L	1	02/05/98
Sodium	A	17	2		mg/L	1	02/05/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
E - Value above quantitation range
S - Spike Recovery outside accepted recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX.219.769.1664

SIMA·LABS
INTERNATIONAL

ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-8	*SIMALABS ID:*	9802009-04C
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
AMMONIA AS N		Method: **E350.1**		Prep Date: **2/9/98**		Analyst: **JEK**	
Nitrogen, Ammonia (As N)	A	0.459	0.1		mg/L	1	02/09/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
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* - Value exceeds Maximum Contaminant Level
E - Value above quantitation range
S - Spike Recovery outside accepted recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits

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SIMA·LABS
INTERNATIONAL

ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-8	*SIMALABS ID:*	9802009-04D
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS		Method: **SW8260A**		Prep Date:		Analyst: **NT**	
Benzene	A	ND	5		µg/L	1	02/09/98
2-Butanone	A	ND	10		µg/L	1	02/09/98
1,1-Dichloroethane	A	ND	5		µg/L	1	02/09/98
cis-1,2-Dichloroethene	A	ND	5		µg/L	1	02/09/98
trans-1,2-Dichloroethene	A	ND	5		µg/L	1	02/09/98
Ethylbenzene	A	ND	5		µg/L	1	02/09/98
Methylene chloride	A	52	5		µg/L	1	02/09/98
Toluene	A	ND	5		µg/L	1	02/09/98
4-Bromofluorobenzene	S	88.6	86-115		%REC	1	02/09/98
Dibromofluoromethane	S	109.5	86-118		%REC	1	02/09/98
1,2-Dichloroethane-d4	S	104.7	80-120		%REC	1	02/09/98
Toluene-d8	S	105.4	88-110		%REC	1	02/09/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
E - Value above quantitation range
S - Spike Recovery outside accepted recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits

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SIMA·LABS
INTERNATIONAL

ANALYTICAL RESULTS

Date: *Monday, February 16, 1998*

Client:	Weaver Boos Consultants	*Client Project:*	97094.00 / Feddeler - Lowell,
		Work Order:	9802009
Client Sample ID:	MW-8	*SIMALABS ID:*	9802009-04E
Sample Description:	Water Sample		
Sample Matrix:	Aqueous		
Collection Date:	02/02/98		
Date Received:	02/02/98		

Analyses	Samp Type	Result	Limit	Qual	Units	DF	Date Analyzed
PHENOLICS, TOTAL		Method: **E420.2**		Prep Date: **2/11/98**			Analyst: **JEK**
Phenolics, Total Recoverable	A	0.0166	0.01		mg/L	1	02/11/98

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard

DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
E - Value above quantitation range
S - Spike Recovery outside accepted recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX.219.769.1664

SIMA·LABS
INTERNATIONAL

250 West 84th Drive
Merrillville, IN 46410
219-769-8378
Fax: 219-769-1664

2.11 VOC Metals w/C

CHAIN OF CUSTODY

Number 19828

Page 1 of 1

Client: Weaver Boos	Project Name: Feddeler	Project No.: 97094.00
Address: 200 S. Michigan Ave.	Location: Lowell IN	
	Turnaround Time (circle one):	
Telephone No.: (312) 922-1030	24 Hour 48Hour 72 Hour 3-5 Days (7-10 Days)	

Contact person to telephone / fax (circle one) results to: Mike Maxwell Fax No.: (312) 922-0201

Purchase Order No. (or other billing reference): _____

Sampled by (PRINT): James M Jaros Sampler Signature: James M Jaros

Sample #	Date	Time	Sample Description	# of Containers	Matrix	Filtered (Y/N)	Preserved	TCL VOA										Laboratory Identification
MW-1	2-2-98	1:00	Water	6	H_2O	Y		✓										2009-01A-E
* MW-5	"	2:00	"	6	"	N		✓										02
MW-6	"	10:20	"	6	"	Y		✓										03
* MW-8	"	12:00	"	6	"	Y		✓										04
				~~6~~														

COMMENTS:	Relinquished by:	Date/Time	Received by:	Date/Time
* MW-5 went dry so filtered out of unpreserved sample for the metals	James M Jaros	2/2/98 4:30	Dennis Julian	2/2/98 4:40
* No dupes for #8				

File 201d
Feddeler C/D Site
#45-08
Lake County

Weaver Boos Consultants, Inc.

200 SOUTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60604 • 312/922-1030 FAX 922-0201

FAX COVER SHEET

To: Greg Overtoom
Company: IDEM
Fax: 317-232-3403
Regarding: Feddeler C/D Facility–Feb 98 Analytical Data

From: Mike Maxwell
Date: 05/11/98 9:15 AM
Pages including cover sheet: 12
Project No.: 0072-03-10

Greg:

Pursuant to our conversation last week, attached is data from the Method Blank, along with a statement from SIMALABS indicating that the methylene chloride likely was introduced to the samples in the laboratory.

In addition, I have attached the field data sheet from each of the four upgradient monitoring wells for the above referenced groundwater sampling event. Please contact me if you have any additional questions.

Thanks.

Signed: Michael B. Maxwell

Hard Copy transmitted via: Regular Mail Express Mail X No Hard Copy

Confidentiality Note

SIMALABS International

Date: *Friday, May 08, 1998*

CLIENT: Weaver Boos Consultants
Project: 97094.00 / Feddeler - Lowell, IN
Lab Order: 9802009

CASE NARRATIVE

Even though Methylene Chloride was not detected in the method blank, the Methylene Chloride detected in the samples was very likely due to lab contamination. The blank was analyzed early in the morning, and the samples were loaded onto the instrument and ran late in the day. At the time of these analysis, the laboratory was experiencing problems with increased Methylene Chloride levels occurring late in the day.

SIMALABS International

Date: *Wednesday, April 08, 1998*

CLIENT: Weaver Boos Consultants
Work Order: 9802009
Project: 97094.00 / Feddeler - Lowell, IN

QC SUMMARY REPORT

Method Blank

Sample ID: 02/09/98 *Batch ID:* VOA_980209B *Method:* SW8260A *Units:* µg/L *Analysis Date:* 02/09/98 *Prep Date:*
Client ID: *Run ID:* VOA_980209B *SeqNo:* 70348

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	10									
1,1,1-Trichloroethane	ND	5									
1,1,2,2-Tetrachloroethane	ND	5									
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10									
1,1,2-Trichloroethane	ND	5									
1,1-Dichloroethane	ND	5									
1,1-Dichloroethene	ND	5									
1,1-Dichloropropene	ND	5									
1,2,3-Trichlorobenzene	ND	5									
1,2,3-Trichloropropane	ND	5									
1,2,4-Trichlorobenzene	ND	5									
1,2,4-Trimethylbenzene	ND	5									
1,2-Dibromo-3-Chloropropane	ND	5									
1,2-Dibromoethane	ND	5									
1,2-Dichlorobenzene	ND	10									
1,2-Dichloroethane	ND	5									
1,2-Dichloroethylene	ND	5									
1,2-Dichloropropane	ND	5									
1,3,5-Trimethylbenzene	ND	5									
1,3-Dichlorobenzene	ND	10									
1,3-Dichloropropane	ND	5									
1,3-Dichloropropene	ND	5									
1,4-Dichloro-2-Butene	ND	10									
1,4-Dichlorobenzene	ND	10									
1,4-Dioxane	ND	150									
1-Chlorohexane	ND	50									
2,2-Dichloropropane	ND	5									
2,3-Dichloropropylene	ND	5									

Qual:
ND - Not Detected at the Reporting Limit
J - Analyte detected below Quantitation Limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range

CLIENT: Weaver Boos Consultants
Work Order: 9802009
Project: 97094.00 / Feddeler - Lowell, IN

QC SUMMARY REPORT

Method Blank

2-Butanone	ND	10
2-Chloroethyl vinyl ether	ND	10
2-Chlorotoluene	ND	10
2-Hexanone	ND	5
4-Chlorotoluene	ND	10
4-Methyl-2-Pentanone	ND	5
Acetone	32	10
Acetonitrile	ND	100
Acrolein	ND	10
Acrylonitrile	ND	10
Allyl Chloride	ND	100
Benzene	ND	5
Bromobenzene	ND	5
Bromochloromethane	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
Butyl Benzene	ND	5
Carbon Disulfide	ND	10
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	5
Chloroethane	ND	10
Chloroform	ND	5
Chloromethane	ND	10
Chloroprene	ND	5
cis-1,2-Dichloroethene	ND	5
cis-1,3-Dichloropropene	ND	5
Cumene	ND	5
Cyclohexanone	ND	50
Dibromochloromethane	ND	5
Dibromomethane	ND	5
Dichlorobromomethane	ND	5
Dichlorodifluoromethane	ND	5

Qual:
ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range

CLIENT: Weaver Boos Consultants
Work Order: 9802009
Project: 97094.00 / Feddeler - Lowell, IN

QC SUMMARY REPORT

Method Blank

Dichlorofluoromethane	ND	10
Diethyl ether	ND	50
Ethene	ND	5
Ethyl Methacrylate	ND	5
Ethylbenzene	ND	5
Ethylene Dibromide	ND	5
Hexane	ND	10
Iodomethane	ND	5
Isobutanol	ND	500
Isobutyl Alcohol	ND	500
Isopropylbenzene	ND	5
m,p-Xylene	ND	5
Methacrylonitrile	ND	5
Methyl Isobutyl Ketone	ND	50
Methyl Methacrylate	ND	5
Methyl-t-Butyl Ether	ND	10
Methylene chloride	ND	5
Methylethyl ketone	ND	10
n-Heptane	ND	50
Naphthalene	ND	10
o-Xylene	ND	5
p-Isopropyltoluene	ND	5
Pentachloroethane	ND	5
Styrene	ND	5
tert-Butyl Methyl Ether	ND	50
Tetrachloroethene	ND	5
Tetrahydrofuran	ND	5
Toluene	ND	5
trans-1,2-Dichloroethene	ND	5
trans-1,3-Dichloropropene	ND	5
trans-1,4-Dichloro-2-Butene	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	5
Vinyl Acetate	ND	10

Qual:
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S - Spike Recovery outside accepted recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range

CLIENT: Weaver Boos Consultants
Work Order: 9802009
Project: 97094.00 / Feddeler - Lowell, IN

QC SUMMARY REPORT

Method Blank

Vinyl chloride	ND	10
1,2-Dichloroethane-d4	50	0
4-Bromofluorobenzene	43	0
Dibromofluoromethane	57	0
Toluene-d8	50	0

Sample ID: pb0211 *Batch ID:* LACHAT_980211 *Method:* E420.2 *Units:* mg/L *Analysis Date:* 02/11/98 *Prep Date:* 02/11/98
Client ID: *Run ID:* LACHAT_980211A *SeqNo:* 70697

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	0.01									

Sample ID: pb0209 *Batch ID:* LACHAT_980209 *Method:* E350.1 *Units:* mg/L *Analysis Date:* 02/09/98 *Prep Date:* 02/09/98
Client ID: *Run ID:* LACHAT_980209C *SeqNo:* 70262

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	ND	0.1									

Sample ID: pb0204 *Batch ID:* LACHAT_980204 *Method:* E375.4 *Units:* mg/L *Analysis Date:* 02/04/98 *Prep Date:* 02/04/98
Client ID: *Run ID:* LACHAT_980204A *SeqNo:* 69426

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	10									

Sample ID: MBlank *Batch ID:* cond_W-2/13/98 *Method:* E120.1 *Units:* umhos/cm *Analysis Date:* 02/13/98 *Prep Date:* 02/13/98
Client ID: *Run ID:* SCMETER_980213A *SeqNo:* 71338

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	ND	10									

Qual:
ND - Not Detected at the Reporting Limit
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SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range

CLIENT: Weaver Boos Consultants
Work Order: 9802009
Project: 97094.00 / Feddeler - Lowell, IN

QC SUMMARY REPORT

Method Blank

Sample ID: MBlank *Batch ID:* CLTR_W-2/4/98 *Method:* E325.3 *Units:* mg/L-dry *Analysis Date:* 02/03/98 *Prep Date:*
Client ID: *Run ID:* TITRATION_980203A *SeqNo:* 69386

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	1									

Sample ID: PB0204-3 *Batch ID:* 1684 *Method:* SW7421 *Units:* mg/L *Analysis Date:* 02/06/98 *Prep Date:* 02/04/98
Client ID: *Run ID:* AA-GFAA_980206A *SeqNo:* 70194

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	.0012	0.005									J

Sample ID: PB0204-3 *Batch ID:* 1684 *Method:* SW7060A *Units:* mg/L *Analysis Date:* 02/06/98 *Prep Date:* 02/04/98
Client ID: *Run ID:* AA-GFAA_980206A *SeqNo:* 70205

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.01									

Qual:
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SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range

CLIENT: Weaver Boos Consultants
Work Order: 9802009
Project: 97094.00 / Feddeler - Lowell, IN

QC SUMMARY REPORT

Method Blank

Sample ID: PB0204-2 *Batch ID:* 1683 *Method:* SW6010A *Units:* mg/L *Analysis Date:* 02/04/98 *Prep Date:* 02/04/98
Client ID: *Run ID:* ICP_980204A *SeqNo:* 69648

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.2									
Antimony	ND	0.2									
Arsenic	ND	0.2									
Barium	ND	0.01									
Beryllium	ND	0.01									
Boron	.1	0.1									
Cadmium	ND	0.01									J
Calcium	.54	1									
Chromium	.063	0.01									
Cobalt	ND	0.0022									
Copper	ND	0.01									J
Iron	.013	0.05									
Lead	ND	0.05									
Magnesium	ND	0.2									
Manganese	ND	0.01									
Mercury	ND	0.0002									
Molybdenum	ND	0.01									
Nickel	ND	0.02									
Potassium	ND	2									
Selenium	ND	0.2									J
Silicon	.65	1									
Silver	ND	0.01									
Sodium	ND	2									
Strontium	ND	0.00054									
Thallium	ND	0.2									
Tin	ND	0.1									
Titanium	ND	0									
Vanadium	ND	0.02									
Zinc	.089	0.03									

Qual:
ND - Not Detected at the Reporting Limit
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* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range

WEAVER BOOS CONSULTANTS, INC.
Groundwater Sampling Field Form

Date: 2-2-98

Site: Fedderer C+D Permit No.:
File: 9709400
Name of Person(s) Sampling: J. Jaros Title:

Monitoring Well No.: MW-8 Upgradient: ✓ Downgradient:

Top of Procover: ____ MSL Top of PVC: 703.44 MSL Ground Surface: ____ MSL

Ground Water Depth (from top of PVC): 21.68 ft. 681.76 MSL Well Depth (from top of pvc) 67.0 ft. 636.44 MSL

Water Volume in Casing: 7.4 gal. Time Purge Started: 11:30 Time Purge Ended: 11:56
2" well contains 0.163 gallons/foot

Well Diameter: 2 in. Total Volume Purged: 35.0 gal. (Min. 3 to 5 vols.) Well Pumped/Bailed Dry? Yes (No)

(Bailer)/Pump: ____ Dedicated? (Yes) No Disposable? Yes (No)

Field Meters (pH, Eh, SC): ____ Dedicated? Yes (No) Disposable? Yes (No)

Field Equipment: ____ Dedicated? Yes (No) Disposable? Yes (No)

Method of Decontamination: Alconox Wash

Sample Condition: Color: Grayish brown, silty Odor: None

Field Measurements:					
pH:	7.08	7.04	7.01	7.08	std. units
Specific Conductivity:	722	715	712	712	umhos/cm
Temperature:	8.7	10.4	10.3	10.4	°C
Dis. Oxygen:					
Eh:					MV
Time:	11:50	11:52	11:54	11:56	

Well Recharge: Very Poor Poor Fair Moderate (Good) Very Good

Weather Conditions: Temperature: 38 Skies: Clear (Partly Cloudy) Cloudy
Precipitation: ____ Light Moderate Heavy
Wind Speed/Direction: Slight N NE E SE S SW W (NW)

Notes/Observations: ____

Sampler(s) Signature: J. Jaros

U:/HOME/96044/06/gws-form.doc

WEAVER BOOS CONSULTANTS, INC.
Groundwater Sampling Field Form

Date: 2-2-98

Site: Fedder C&D
File: 97044.00
Name of Person(s) Sampling: S. Jaros
Permit No.:
Title:

Monitoring Well No.: MW-1 Upgradient: ✓ Downgradient:

Top of Procover: MSL Top of PVC: 702.80 MSL Ground Surface: MSL

Ground Water Depth (from top of PVC): 24.08 ft. 678.72 MSL Well Depth (from top of pvc) 35.1 ft. 667.7 MSL

Water Volume in Casing: 1.79 gal. Time Purge Started: 12:20 Time Purge Ended: 12:40
2" well contains 0.163 gallons/foot

Well Diameter: 2 in. Total Volume Purged: 8.9 gal. (Min. 3 to 5 vols.) Well Pumped/Bailed Dry? Yes No

Bailer/Pump: _____ Dedicated? (Yes) No Disposable? Yes No

Field Meters (pH, Eh, SC): _____ Dedicated? Yes (No) Disposable? Yes (No)

Field Equipment: _____ Dedicated? ~~Yes~~ (No) Disposable? Yes (No)

Method of Decontamination: Alconox Wash

Sample Condition: Color: Brown, silty Odor: none

Field Measurements:					
pH:	6.89	6.83	6.84	6.84	std. units
Specific Conductivity:	641	614	615	619	umhos/cm
Temperature:	10.7	12.9	13.0	13.0	°C
Dis. Oxygen:					
Eh:					MV
Time:	12:25	12:28	12:31	12:36	

Well Recharge: Very Poor Poor (Fair) Moderate Good Very Good

Weather Conditions: Temperature: 30 Skies: Clear (Partly Cloudy) Cloudy
Precipitation: N Light Moderate Heavy
Wind Speed/Direction: _____ N NE E SE S SW W (NW)

Notes/Observations: _____

Sampler(s) Signature: _____

WEAVER BOOS CONSULTANTS, INC.
Groundwater Sampling Field Form

Date: 2-2-98

Site: Faddelor CrD Permit No.:
File: 9709402
Name of Person(s) Sampling: J. Jaros Title:

Monitoring Well No.: MW-6 Upgradient: ✓ Downgradient:

Top of Procover: MSL Top of PVC: 695.97 MSL Ground Surface: MSL

Ground Water Depth (from top of PVC): 14.24 ft. 681.73 MSL Well Depth (from top of pvc): 33.9 ft. 662.07 MSL

Water Volume in Casing: 3.2 gal. Time Purge Started: 9:50 Time Purge Ended: 10:20
2" well contains 0.163 gallons/foot

Well Diameter: 2 in. Total Volume Purged: 16 gal. (Min. 3 to 5 vols.) Well Pumped/Bailed Dry? Yes (No)

Bailer/Pump: Dedicated? (Yes) No Disposable? Yes No

Field Meters (pH, Eh, SC): ✓ Dedicated? Yes (No) Disposable? Yes (No)

Field Equipment: Dedicated? Yes (No) Disposable? Yes (No)

Method of Decontamination: Alkinox Wash

Sample Condition: Color: brown silty Odor: none

Field Measurements:					
pH:	6.93	6.96	6.95	6.94	std. units
Specific Conductivity:	720	717	715	712	umhos/cm
Temperature:	7.6	7.7	7.7	7.7	°C
Dis. Oxygen:					
Eh:					MV
Time:	10:20	10:12	10:14	10:16	

Well Recharge: Very Poor Poor Fair (Moderate) Good Very Good

Weather Conditions: Temperature: 35 Skies: Clear Partly Cloudy (Cloudy)
Precipitation: None Light Moderate Heavy
Wind Speed/Direction: 3 mph (N) NE E SE S SW W NW

Notes/Observations:

Sampler(s) Signature:

.163
16
17

WEAVER BOOS CONSULTANTS, INC.
Groundwater Sampling Field Form

Date: 2-2-98

Site: Faddeler C&D
File: 97094.00
Permit No.:
Name of Person(s) Sampling: J. Jaros
Title:

Monitoring Well No.: MW-5
Upgradient: ✓
Downgradient:

Top of Procover: MSL
Top of PVC: 706.96 MSL
Ground Surface: MSL

Ground Water Depth (from top of PVC): 27.81 ft. 679.15 MSL
Well Depth (from top of pvc) 35.8 ft. 671.16 MSL

Water Volume in Casing: 1.3 gal.
Time Purge Started: 1:45
Time Purge Ended: 2:00
2" well contains 0.163 gallons/foot

Well Diameter: 2 in.
Total Volume Purged: 6.5 gal. (Min. 3 to 5 vols.)
Well Pumped/Bailed Dry? Yes No

Bailer/Pump:
Dedicated? (Yes) No
Disposable? Yes No

Field Meters (pH, Eh, SC):
Dedicated? Yes (No)
Disposable? Yes (No)

Field Equipment:
Dedicated? Yes (No)
Disposable? Yes (No)

Method of Decontamination: Alchinox, Wash

Sample Condition:
Color: brown - silty
Odor: none

Field Measurements:					
pH:	7.5	7.45	7.47	7.50	std. units
Specific Conductivity:	583	595	599	591	umhos/cm
Temperature:	12.5	12.6	12.2	12.3	°C
Dis. Oxygen:					
Eh:					MV
Time:	1:50	1:53	1:55	1:58	

Well Recharge: Very Poor Poor Fair Moderate Good Very Good

Weather Conditions: Temperature:
Skies: Clear Partly Cloudy Cloudy
Precipitation: Light Moderate Heavy
Wind Speed/Direction: N NE E SE S SW W NW

Notes/Observations:
while sampling well went dry. Metals will be filtered from sample with no preservative

Sampler(s) Signature: J. Jaros

Weaver Boos Consultants, Inc.

200 SOUTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60604 • 312/922-1030 FAX 922-0201

March 17, 1998
Project #97094.00

Mr. Steven L. Buckel, Chief
Solid Waste Chemistry Section
Office of Solid and Hazardous Waste Management
Indiana Department of Environmental Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Re: Supplemental Information Request
Feddeler C/D Landfill, Lake County
Sampling and Analysis Plan and
Quality Assurance Project Plan

Dear Mr. Buckel:

Pursuant to IDEM's correspondence dated January 12, 1998, on behalf of our client, R&M Enterprises, enclosed please find additional information regarding the Groundwater Monitoring Program Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP) for the above referenced facility.

Note that we have addressed IDEM comments 1 through 7 regarding the SAP, as provided in the January 12, 1998 letter. Since the principal behind the SAP is to have a unified document plan, a complete version of the SAP, including the tables, figures, and appendices, has been resubmitted as a revised SAP. Two complete copies of the revised SAP are enclosed.

The following presents each of IDEM's comments (*italics*) followed by our response.

IDEM Comment # 1

Provide the correct procedure for purging with a bailer as described in 329 IAC 10-21-2(b)(5)(B), since the purging and sampling will be done with dedicated bailers. The purging procedure described in Section 21.2 of the SAP is for purging with a pump.

The correct procedure for purging with a bailer has been added to Section 21.2 of the revised SAP. The primary method of purging will be to purge three (3) to five (5) well volumes. The method allows for the option of purging to stability, as long as at least three (3) and no more than five (5) well volumes are removed during purging. A detailed description of "purging to stability" is also provided in Section 21.2 of the revised SAP.

IDEM Comment # 2

Change ammonium to ammonia in the parameter list provided on page 2 of the SAP. The Facility Permit # 45-08, Condition D10 lists ammonium. This may be a typographical error. Phase I monitoring program, 329 IAC 10-29-6(b), lists the parameter correctly.

The above change has been made to the revised SAP.

IDEM Comment # 3

Change Ammonium to Ammonia in the parameter list on Table 2 and expand Table 2 to include total phenolics.

The above modifications have been made to Table 2.

IDEM Comment # 4

Provide holding times, including extraction and analysis holding times where applicable. These are not provided in the SAP or QAPP.

Holding times have been added to Table 2 of the SAP. Note that none of the Phase I parameters require extraction, therefore extraction holding times are not applicable.

IDEM Comment # 5

Provide analytical parameter lists for the quality control blanks described in Sections 25.0 and 26.0.

Analytical parameter lists for the trip blank, equipment blank, field blank, and duplicate sample have been added to Sections 25.0 and 26.0 of the SAP. In each of these cases, the quality control samples will be analyzed for the Phase I parameters, unless the facility enters assessment monitoring.

IDEM Comment # 6

The initial and continuing calibration verification (ICV and CCV) recovery limits provided in Section 6.2.3 of the QAPP for graphite furnace atomic absorption analysis (GFFA) are 80 - 120 %. These shall be changed to 90 - 110 %. These changes are recommended, just in case, GFFA methods will be used instead of ICP methods.

These recommended modifications have been made to the QAPP.

IDEM Comment # 7

Include tuning criteria for bromofluorobenzene (BFB) in QAPP.

The above information has been added to the QAPP submitted with the revised SAP.

Additional Modifications

In addition to each of the above required modifications, the method of field filtration has been updated as part of this SAP revision. A peristaltic pump will be used to filter groundwater samples in the field. A description of the method used to field filter samples, along with a description of decontamination methods have been added to Section 24.0 of the SAP.

We trust that the provided responses and additional information adequately addresses each of IDEM's comments regarding the SAP for the Feddeler facility. If you should have any questions, please do not hesitate to contact either of the undersigned.

Sincerely,

Weaver Boos Consultants, Inc.

Michael B. Maxwell
Staff Geologist

Michael B. Maxwell for
Larry Emerson, P.E.
Senior Project Manager

Enclosures

cc: Ms. Julie Feddeler - R&M Enterprises
Mr. Joe Scodro - Bigham, Summer Welsh & Spilman